

ABSTRACT

An InGaP buffer layer (3) is formed on a semi-insulating GaAs substrate (1) to a thickness of not less than 5 nm and not greater than 500 nm and an InAlAs layer (4) and an InGaAs channel layer (5) are grown thereon to form a heterostructure. An In segregation effect occurs at the time of forming the InGaP buffer layer (3), so that the region of the InGaP buffer layer (3) near the layer above becomes excessive in In. As a result, the composition of the surface of the InGaP buffer layer (3) becomes very close to the composition of InP, thereby suppressing occurrence of misfit dislocations that can result in degradation of the surface condition. Further, the surface condition of the InAlAs layer (4) and InGaAs channel layer (5) formed thereon can be made good.